

The opinion in support of the decision being entered today was *not* written for publication and is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* RICHARD P. WELTY,  
PATRICK JONTE and CARL W. TRENDLMAN

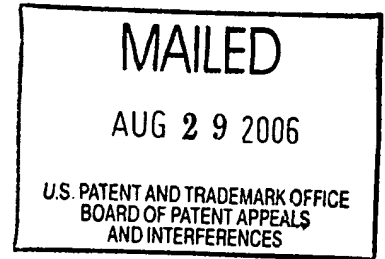
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Appeal No. 2006-2660  
Application 10/007,021

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ON BRIEF

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Before WARREN, TIMM and FRANKLIN, *Administrative Patent Judges*.

WARREN, *Administrative Patent Judge*.

*Decision on Appeal*

This is an appeal under 35 U.S.C. § 134 from the decision of the examiner finally rejecting claims 22 through 53, all of the claims in the application.

Claims 22 and 32 illustrate appellants' invention of a coated article, and are representative of the claims on appeal:

22. An article having on at least a portion of a surface a coating consisting essentially of, in order:

a nickel layer;

a strike layer consisting essentially of zirconium, titanium or zirconium-titanium alloy directly contacting said nickel layer; and

an outer layer consisting essentially of zirconium compound, titanium compound, or zirconium-titanium alloy compound directly contacting said strike layer, and said outer layer is uncoated.

32. An article having a coating on at least a portion of a surface of said article, said article comprising

a substrate consisting essentially of zinc or aluminum;

a nickel layer;

a strike layer consisting essentially of zirconium, titanium or zirconium-titanium alloy directly contacting said nickel layer and having a thickness less than millionths of an inch; and

an outer layer consisting essentially of zirconium compound, titanium compound, or zirconium-titanium alloy compound directly contacting said strike layer, and said outer layer is uncoated.

The references relied on by the examiner are:

Fink	5,759,677	Jun. 2, 1998
Foster et al. (Foster)	5,879,532	Mar. 9, 1999

The examiner has rejected appealed claims 22 through 53 under 35 U.S.C. § 102(e) (2002) as being anticipated by Foster (answer, pages 3-4), and claims 39 and 43 under 35 U.S.C. § 103(a) as being unpatentable over Foster as applied to claims 22 through 53 further in view of Fink (answer, page 4).

Appellants argue the rejected claims as a group with respect to the first and second grounds of rejection (brief, pages 2 and 5). Thus, we decide this appeal based on appealed independent claims 22 and 32 and dependent claim 39 as representative of the grounds of rejection and appellants' groupings of claims. 37 CFR § 41.37(c)(1)(vii) (2005).

We affirm.

We refer to the answer and to the brief and reply brief for a complete exposition of the positions advanced by the examiner and appellants.

#### *Opinion*

Considering first the ground of rejection under § 102(e), we have carefully reviewed the record on this appeal and based thereon find ourselves in agreement with the supported finding advanced by the examiner that as a matter of fact, *prima facie*, appealed claims 22 and 32 are anticipated by Foster. Therefore, in view of the *prima facie* case of anticipation made out by the examiner, we have again evaluated all of the evidence of anticipation and non-anticipation based on the record as a whole, giving due consideration to the weight of appellants' arguments in the

brief and reply brief. *See generally, In re Spada*, 911 F.2d 705, 707 n.3, 15 USPQ2d 1655, 1657 n.3. (Fed. Cir. 1990).

Appellants submit that Foster does not anticipate the claims because (1) the claims require that a layer of nickel and then a strike layer of refractory metal or refractory metal alloy and the reference describes to one skilled in this art an article wherein a chrome layer is between the nickel layer and a layer of refractory metal or refractory metal alloy; and (2) the claims require that the layer of refractory metal or refractory metal alloy is directly contacted by a layer of refractory metal compound or refractory metal alloy compound which is uncoated and the reference would have described further coating the layer of refractory metal compound or refractory metal alloy compound (brief, pages 3-5). Appellants contend that the structure of nickel layer, strike layer and uncoated outer layer as claimed is not shown in any of the illustrative embodiments of Foster (*id.*). We disagree.

We initially determine that the plain language of claim 22 specifies an article having to some extent on its surface a coating consisting essentially of, in order, a nickel layer, a metal strike layer directly contacting the nickel layer, and an uncoated outer metal compound layer directly contacting the strike layer, wherein the metal in each instance is zirconium, titanium or zirconium-titanium alloy. The plain language of claim 32 specifies an at least partially coated article comprises at least a substrate consisting essentially of zinc or aluminum, and a nickel layer, a metal strike layer directly contacting the nickel layer, and an uncoated outer metal compound layer directly contacting the strike layer, wherein the metal in each instance is zirconium, titanium or zirconium-titanium alloy. We note here that claims 23 and 33, dependent on claims 22 and 32, respectively, specify that the “compound” is carbides, oxides, nitrides and carbonitrides.

The transitional term “consisting essentially of” in claim 22 opens the claim to encompass articles that include additional layers and ingredients which do not materially effect the basic and novel properties of the coating as established by the written description in the specification, such as additional layers, which can be between the substrate and the nickel layer, and several different nickel layers based on brightener additives (specification, e.g., page 4). *PPG Indus., Inc. v. Guardian Indus. Corp.*, 156 F.3d 1351, 1354-57, 48 USPQ2d 1351, 1353-56

(Fed. Cir. 1998) (Patentees “could have defined the scope of the phrase ‘consisting essentially of’ for purposes of its patent by making clear in its specification what it regarded as constituting a material change in the basic and novel characteristics of the invention. The question for our decision is whether PPG did so.”); *In re Herz*, 537 F.2d 549, 551-52, 190 USPQ 461, 463 (CCPA 1976) (“[I]t is necessary and proper to determine whether [the] specification reasonably supports a construction” that would exclude or include particular ingredients.). The transitional term “comprising” opens claim 32 to encompass articles containing additional layers, such as between the substrate and the nickel layer, and several different nickel layers based on brightener additives. *See generally, Exxon Chem. Pats., Inc. v. Lubrizol Corp.*, 64 F.3d 1553, 1555, 35 USPQ2d 1801, 1802 (Fed. Cir. 1995) (“The claimed composition is defined as comprising - meaning containing at least - five specific ingredients.”); *In re Baxter*, 656 F.2d 679, 686-87, 210 USPQ 795, 802-03 (CCPA 1981) (“As long as one of the monomers in the reaction is propylene, any other monomer may be present, because the term ‘comprises’ permits the inclusion of other steps, elements, or materials.”).

It is well settled that the examiner has the burden of establishing a *prima facie* case of anticipation under § 102(e) in the first instance by pointing out where each and every element of the claimed invention, arranged as required by the claim, is described identically in a single reference, either expressly or under the principles of inherency, in a manner sufficient to have placed a person of ordinary skill in the art in possession thereof. *See generally, Spada*, 911 F.2d at 708, 15 USPQ2d at 1657. It is further well settled that if a reference does not disclose a specific embodiment which satisfies all of the claim limitations, the reference will nonetheless describe the claimed invention within the meaning of § 102 if it “clearly and unequivocally . . . [directs] those skilled in the art to [the claimed invention] without *any* need for picking, choosing, and combining various disclosures not directly related to each other by the teachings of the cited reference.” *In re Arkley*, 455 F.2d 586, 587, 172 USPQ 524, 526 (CCPA 1972). Whether a reference provides clear and unequivocal direction to the claimed invention is determined on the total circumstances with respect to the disclosure of the reference, *see In re Petering*, 301 F.2d 676, 682, 133 USPQ 275, 280 (CCPA 1962), including “not only specific teachings of the reference but also the inferences which one skilled in the art would reasonably

be expected to draw therefrom.” *In re Preda*, 401 F.2d 825, 826, 159 USPQ 342, 344 (CCPA 1968); *see also In re Graves*, 69 F.3d 1147, 1152, 36 USPQ2d 1697, 1701 (Fed. Cir. 1995), and cases cited therein (a reference anticipates the claimed method if the step that is not disclosed therein “is within the knowledge of a skilled artisan.”). Such direction is provided to one skilled in the art where the totality of the reference provides a “pattern of preferences” which describes the claimed invention without the necessity for judicious selection from various disclosures thereof. *See In re Sivaramakrishnan*, 673 F.2d 1383, 213 USPQ 441 (CCPA 1982) (“[T]he fact remains that one of ordinary skill informed by the teachings of [the reference] would not have had to choose judiciously from a genus of possible combinations of resin and salt to obtain the very subject matter to which appellant’s composition per se claims are directed.”); *In re Schaumann*, 572 F.2d 312, 316-17, 197 USPQ 5, 9-10 (CCPA 1978); *Petering*, 301 F.2d at 681-82, 133 USPQ at 279-80.

We find in Foster substantial evidence which supports the examiner’s position that the claimed invention encompassed claims 22 and 32, as we have interpreted these claims above, would have been described to one skilled in this art under the meaning of § 102(e). Foster acknowledges that it was known in the art to coat articles by electroplating a layer or series of layers on the substrate and then depositing by physical vapor deposition a further layer or series of layers (col. 1, ll. 10-15). Foster describes coating an article by electroplating at least one layer of, among others, nickel, which can be a “duplex nickel layer composed of bright nickel and semi-bright nickel,” and then vapor depositing a layer or layers of refractory metals, refractory metal alloys, refractory metal compounds and refractory metal alloy compounds, wherein the compounds include carbides, oxides, nitrides and carbonitrides (e.g., col. 1, l. 66, to col. 2, l. 20). Foster describes a preference for zirconium, titanium and zirconium-titanium alloy as the metals and as the metal of the metal compounds (e.g., col. 6, ll. 58-59 and 63-64, col. 8, ll. 47-52, col. 9, ll. 1-2, 24-26 and 31-41, col. 10, ll. 55-57, and col. 11, ll. 24-27). The articles can be “any platable substrate such as metal or plastic,” and can include “brass, zinc, steel and aluminum” wherein the preferred electroplated coatings include “copper, including alkaline copper and acid copper, nickel, including bright nickel and semi-bright nickel, and chrome” (col. 3, ll. 55-63).

Contrary to appellants' first contention, we find that Foster describes "examples of electroplated layers" in which five of the eleven examples are "substrate/nickel such as bright nickel, substrate/semi-bright nickel/bright nickel," "substrate/copper such as acid copper/nickel such as bright nickel, substrate/copper such as alkaline copper/semi-bright nickel/bright nickel and substrate/alkaline copper/acid copper/semi-bright nickel/bright nickel" (col. 6, ll. 27-41). Each of these five structures satisfy the requirement for a coating of nickel on a substrate in claims 22 and 32, as we have interpreted these claims above, as none contains an outer chrome layer. Foster makes clear that these structures are further coated with refractory metal and refractory metal compound layers by vapor deposition (col. 6, l. 42, to col. 7, l. 22).

With respect to appellants' second contention, we find as a matter of fact that, as appellants point out, Foster as a whole describes to one skilled in the art that the refractory metal or refractory metal alloy layer is always deposited directly on the plated metal layer, and a refractory metal or refractory metal alloy compound layer is always deposited on the refractory metal or refractory metal alloy layer. Foster explains that "[g]enerally the refractory metal or refractory metal alloy layer functions, inter alia, to improve the adhesion of a layer comprised of refractory metal compound, refractory metal alloy compound, reaction products of refractory metal or refractory metal alloy, oxygen and nitrogen to the electroplated article," and is preferably zirconium, titanium or zirconium-titanium alloy (col. 8, ll. 34-51). Foster further explains that the refractory metal compound or refractory metal alloy compound layer "generally provides wear resistance, abrasion resistance and the desired color or appearance," and is preferably zirconium nitride or zirconium-titanium alloy nitride (col. 8, l. 66, to col. 9, l. 5). We note here that appellants disclose the same functions for the metal strike layer and the metal compound outer layer in the written description in the specification (e.g., pages 8 and 9).

Based on this substantial evidence, we are of the opinion that Foster describes to one skilled in the art armed with the knowledge in the art an article at least a portion of the surface of which is coated with layers consisting essentially of or comprising a nickel layer, a strike layer directly contacting the nickel layer which is a zirconium, titanium or zirconium-titanium alloy metal and an outer coating directly contacting the metal strike layer which is a zirconium compound, a titanium compound or a zirconium-titanium alloy compound in which the outer

layer is further uncoated. Indeed, Foster describes the articles thereof as coated for the purposes stated therein when the metal layer has deposited directly thereon a metal compound layer, and thus one skilled in the art would have been in possession of the claimed coated article encompassed by claims 22 and 32.

Accordingly, we have again considered the totality of the record before us, weighing all of the evidence of anticipation found in Foster with appellants' countervailing arguments for non-anticipation in the brief and reply brief, and based thereon, conclude that the claimed invention encompassed by appealed claims 22 through 53 would have been anticipated as a matter of fact under § 102(e) (2002).

Appellants submit the same arguments with respect to the ground of rejection of claim 39 over the combined teachings of Foster and Fink, and further contends that Foster would not have suggested coating the doorknob of Fink (brief, page 5). The difficulty that we have with appellants' argument here is that Foster would have described using the coatings taught thereon on a "lock" which one skilled in this art or one of ordinary skill in this art would have recognized as a door passage set or "doorknob."

Accordingly, based on our consideration of the totality of the record before us, we have weighed the evidence of obviousness found in the combined teachings of Foster and Fink with appellants' countervailing evidence of and argument for nonobviousness and conclude that the claimed invention encompassed by appealed claims 39 and 43 would have been obvious as a matter of law under 35 U.S.C. § 103(a).

The examiner's decision is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a)(1)(iv) (2005).

*AFFIRMED*

  
CHARLES E. WARREN

CHARLES F. WARREN  
Administrative Patent Judge

Catherine Sun

CATHERINE TIMM  
Administrative Patent Judge

Beverly A. Franklin

BEVERLY A. FRANKLIN  
Administrative Patent Judge

# BOARD OF PATENT APPEALS AND INTERFERENCES



Appeal No. 2006-2660  
Application 10/007,021

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